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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,238	12/18/2001	Lance T. Ransom	GP-301069	3698
7590	06/21/2004		EXAMINER	
General Motors Corporation Legal Staff Mail Code 482-C23-B21 P.O. Box 300 Detroit, MI 48265-3000			KEENAN, JAMES W	
			ART UNIT	PAPER NUMBER
			3652	

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/023,238	RANSOM, LANCE T.	
	<b>Examiner</b>	<b>Art Unit</b>	
	James Keenan	3652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) Responsive to communication(s) filed on 31 March 2004.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) Claim(s) 1-4, 10 and 11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-4, 10 and 11 is/are rejected.
- 7) Claim(s) 1 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_

Art Unit: 3652

1. Claim 1 is objected to because of the following informalities: the recitation of "component" should apparently be --assemblies--. Appropriate correction is required.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foulke et al (US 4,493,606) in view of Hayashi et al (JP 8-96471), both of record.

Foulke et al show an apparatus for loading articles (assemblies) into a rack 14 (fig. 5) having side and bottom dunnage 128, 130, respectively, including slots 132 for receiving individual articles, a robot tool 42 mounted on arm 40 and adapted to load articles in the rack, the tool including sensor 400 (figs. 9-11) and compliant support 410-420 (fig. 16) which allows "soft placement" of the article into the rack.

The sensor of Foulke et al senses the slots rather than a sensor hole adjacent the slots.

Hayashi et al show a wafer cassette with sensor holes adjacent slots thereof such that a sensor mounted on a robot arm determines the proper position in the rack from which to pick up an article.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Foulke et al by sensing a hole adjacent each slot, as suggested by Hayashi et al, as this would simply be an art recognized alternate equivalent means of sensing the proper position of wafers in a cassette, the

utilization of which would require no undue experimentation and produce no unexpected results.

Re claim 3, although details of the slots are not shown, the examiner takes official notice that the use of chamfered "lead-in angles" around the periphery of slots in a wafer cassette to guide wafers into position is a well known and obvious design expediency.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Foulke et al in view of Hayashi et al, as applied to claim 1 above, and further in view of Hounsfield et al (US 4,702,667), of record.

The modified apparatus of Foulke et al does not include a lock for fixing the position of the compliant support.

Hounsfield et al show a robot having a compliant support between an arm and a gripper thereof, wherein a locking device is used to prevent displacement of the compliant support.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have further modified the apparatus of Foulke et al by adding a lock to the compliant support, as shown by Hounsfield et al, so as to provide selective compliance.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Foulke et al in view of Hayashi et al, as applied to claim 1 above, and further in view of Becicka et al (US 5,098,254), of record.

The modified apparatus of Foulke et al does not show a second sensor on the tool for sensing an object in the rack and thus indicating a preload position.

Becicka et al show a robot having a tool with proximity sensors thereon which sense the position of articles previously loaded onto a pallet and thus indicate the proper position of the next article to be loaded. Although not explicitly stated, if no articles were previously loaded on the pallet, this obviously would be sensed as well and the robot would inherently be guided to a "preload" position.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have further modified the apparatus of Foulke et al with a second sensor for sensing the location of articles in the rack, including the absence of any articles, as shown by Becicka et al, so that the robot could load articles into the appropriate slot.

6. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foulke et al in view of Hounsfield et al.

This rejection is substantially the same as that set forth above with respect to claim 2, except that since no sensor is claimed, the Hayashi et al reference is not used.

7. Applicant's arguments filed 3/31/04 have been fully considered but they are not persuasive.

Applicant argues that the wafer rack of Foulke et al does not comprise dunnage, stating that its use in a diffusion furnace requires temperatures at which dunnage for auto parts would not survive. The claims are not limited for use with any particular type

of parts. The broad recitation of dunnage set forth in the claims simply does not define over the reference.

Applicant also argues that the soft placement mechanism of Foulke et al does not constitute a compliant support, asserting that it merely assists in picking up and putting down wafers while avoiding contact with the slots to eliminate contamination. However, it is noted that the claims set forth both side and bottom dunnage. While it may be desirable to avoid the slots in the side dunnage, the wafers clearly do not avoid the slots in the bottom dunnage, since they are of course supported thereby. The soft placement mechanism at least to some extent allows "limited compliant positioning", as broadly claimed, since the purpose of the soft placement mechanism is to gently pick up or place the wafers from or into the slots of the bottom dunnage without damaging them by either slamming the tool into the wafer or the wafer into the slot.

Finally, it is noted that applicant has not contested the obviousness *per se* of the rejections.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Keenan whose telephone number is 703-308-2559. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on 703-308-3248. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
James Keenan  
Primary Examiner  
Art Unit 3652

jwk  
6/15/04